



HP 64000 Logic Development System

Model 64100AF/AT Measurement System Reference Manual



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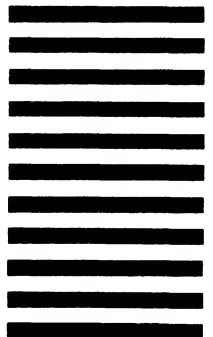
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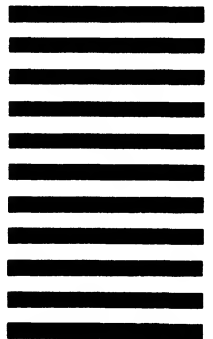
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OPERATOR MANUAL

**MODEL 64100AF/AT
MEASUREMENT SYSTEM
REFERENCE MANUAL**

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LOGIC SYSTEMS DIVISION
COLORADO SPRINGS, COLORADO, U.S.A.

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PRINTING HISTORY

Each new edition of this manual incorporates all material updated since the previous edition. Manual change sheets are issued between editions, allowing you to correct or insert information in the current edition.

The part number changes only when each new edition is published. Minor corrections or additions may be made as the manual is reprinted between editions. Vertical bars in a page margin indicate the location of reprint corrections.

First Edition	March 1982	64980-90916
Second Edition	May 1982	64980-90922
Third Edition	July 1985	64980-90922
Update U1085	October 1985	

SOFTWARE VERSION NUMBERS

Your HP 64000 software is identified with a version number in the form YY.XX. This operating manual applies to the following:

Model 64100 Version 2.XX

Within the software version number, the digit to the left of the decimal point indicates the product feature set. This manual supports all software versions identified with this same digit.

The digits to the right of the decimal point indicate feature subsets. These feature subsets normally have no affect on the manual. However, if you subscribe to the Software Materials Service, these subset items are covered in the Software Release Bulletin (SRB).

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Chapter 1

ENTERING THE MEASUREMENT SYSTEM

INTRODUCTION

The Measurement System Monitor is a software module associated with the operation of analysis and emulation in the HP 64000 System. Its purpose is to provide:

- a. a central point for access to measurement modules
- b. a display of the measurement module configuration in the card cage
- c. a summary of the current intermodule communications
- d. the status of the current or most recent measurement
- e. notification of erroneous configurations

ENTRY SYNTAX

Entering the measurement system is dependent on the number of modules present in the card cage. If only one is present, the command begins with the name of that module along with the options possible for that module. If more than one module is present, the command begins with "measurement_system" and has the single option of "continue". In all cases, the proper first word of the command appears on the softkey label.

Examples:

```
measurement_system [options continue]
```

This syntax is available whenever there is more than one measurement system module of any type in the card cage. No other syntax is available with multiple modes. The softkey reads "meas_sys".

When only a single emulator is present, the softkey reads "emulate", and the options to edit the configuration or load an absolute file are available. Internal Analysis will be configured from a trace file of the same name as the emulation command file if it is specified. This command enters the emulation module directly without entering the Measurement System Monitor.

```
emulate[<CMDFILE> [options {continue  
                             edit } ] [load <ABSFILE>]
```

When a single state or timing module is present, the command begins with the module name, and the option of configuring from a previously created "trace" file is available. This command enters the analysis module directly without entering the Measurement System Monitor.

```
state [<CMDFILE>] [options continue]
```

```
timing [<CMDFILE>] [options continue]
```

CONTROL BOARD DETERMINATION

Each measurement system mode may be a group of cards, depending on the type of function. Emulators typically consist of an emulation control card, a memory controller card, memory cards, and an optional internal analyzer. State and timing analyzers consist of control cards and one or more data acquisition cards. For each set of cards, one is designated as the control board for that set of cards. The presence or absence of this card determines whether or not the module is recognized. The card cage slot number of the control board is also the slot number appended to the module name whenever the module is reference. For example, "state_5" indicates a state analyzer control card in slot five, and "emZ8002_7" indicates a General Purpose Emulation Control Card in slot 7 with a Z8002 pod attached.

ENTERING A MODULE

A measurement system module is entered by a command with the syntax:

```
<MODULE>      [<FILE>]
```

The <MODULE> is the name of the module appended with the slot number of the control card that is presented on the softkey. The slot number distinguishes between multiple modes of the same type.

The optional <FILE> parameter can be used to configure the module to a previously stored configuration. If no <FILE> name is specified, the action taken within the module depends on whether this was the first name entered, entered with a continue option, or a subsequent entry during a single measurement session. If it is the first entry, and continue was not specified on entry into the measurement system, the module will configure to its default state. This will depend on the characteristics of the module but generally consists of a simple measurement specification or a special configuration path into the module. If this is a subsequent entry into the module, or the continue option was used to enter the measurement system, the module will continue with its previous specification.

Entering a module with <FILE> specified will cause the module to be configured from that file. In the case of an analyzer, the file is of type "trace"; for some emulators it is of type "emul-com" with a trace file of the same name used to configure the internal analyzer.

When only a single module is present, the module will be entered directly and the Measurement System Monitor user interface will not be shown.

CONTINUE

The "continue" option (available when the measurement system is invoked) allows for a previous session to be re-entered without disrupting the measurement in progress. If continue is not specified, all measurement system modules will be reinitialized to their default configuration and any activity will be stopped. A measurement session may not be continued if any of the following conditions exist:

- a. **Power has been cycled or the station has been reset (shift/reset).** At power-up, the module hardware initializes to a state different from the previous setup and requires initialization to the default state on entry to the measurement system. The continue option is disabled by the HP 64000 system whenever this occurs. Activity on other stations in a system (e.g., power-on, I/O bus reset, etc.) will not prevent continue from functioning.
- b. **Performance verification (option_test) has been initiated.** Execution of the performance verification routines will leave module hardware in an indeterminate state differing from the previous setup. This routine requires reinitialization to the default state on entry to the measurement system. This will occur regardless of which hardware boards have been tested or are associated with the measurement system to avoid interference between modules on the Intermodule Bus.
- c. **The last session was reset (reset-reset).** Exiting the measurement system via reset-reset does not allow for the saving on disc of the current system configuration. Continue is not allowed after this occurs.
- d. **The measurement system configuration file is not present.** Continuing a measurement session requires that a file describing the configuration be present on the disc(s). The name of this file is ConfigN:HP of type "trace", where "N" is the System Bus address of the station in a multistation system or is 8 in a stand-alone station. If this file is not present (e.g., removal of flexible disc) the previous session may not be continued. The absence of the file is indicated by the status line message "ERROR: File not found file=ConfigN:HP:trace".
- e. **A module was exited in a noncontinuable fashion.** Depending on the particular module, exiting the module by using reset-reset may prevent a measurement session from being continued. This can be corrected by re-entering the module and exiting in the normal fashion. In addition, modules use disc files to store their current configuration on exit from the module and at other times depending on the module. If this file is not present, a continue will not be possible for that module. Refer to the individual module documentation for further information.

SINGLE MODULE

When a single module exists in the card cage, the measurement system takes on a simpler form. The command used to enter the measurement system begins with the name of the module as presented on the softkeys. For some modules, additional options are available (e.g., "load" for emulators). When the command is issued, the measurement system is executed, but the user interface is bypassed as it serves no useful function. The individual module is evoked directly as this is the only meaningful option available from the Measurement System Monitor. When the module is exited, the Measurement System Monitor is bypassed since the only meaningful option would be to end from that level. Individual modules may also alter their command set when there is only one module present (for example, the deletion of module interaction features).

ERROR CONDITIONS

Various error and warning conditions may occur when the measurement system is evoked. Few of these prevent the session from continuing with at least one of the modules present. Errors are indicated by status line messages as follows:

Command file not created by IMB monitor

During reconfiguration with "options continue", the file ConfigN:HP did not have the correct format for the measurement system because it was created by another module. The file will be correctly overwritten the next time the measurement system is ended.

Continuation of previous measurement session not possible

The continue option cannot be used because either the last session or module was ended using reset-reset, performance verification has been executed, or the power has been off.

File meas_sysN:HP not present

A portion of the measurement system software is not present; N is a number indicating which portion.

Illegal hardware configuration in XXXXXXXX_N

During configuration, the module specified did not have an acceptable hardware configuration. The description of the module provides further information about the problem.

Intermodule Bus might not be reset, slot 0 (reset at power up)

There is a module in the card cage without the necessary software to control it. The module may interfere with intermodule measurements unless power has been off since the last time it was used in an intermodule measurement.

No measurement system control boards

The card cage does not contain any boards that are designated as control boards for the measurement system. Card cage contents can be established using option_test.

Software not found for indicated module(s)

Software required to use one or more of the modules was not present on the disc during configuration. Any such module may not be used during this session. The module status and description indicates this condition.

Too many control boards, some not accessible

There are more than four control boards present. Those further back in the card cage may not be used.

SPECIAL MODULE DESCRIPTIONS

The following descriptions may appear as the description of a module in the configuration/status portion of the display. They are placed by the measurement system rather than the module and describe special configuration conditions.

No software found for this module

Software required to use this module was not present on the disc during configuration. The module may not be used during this session.

Selecting module exits measurement system

This module, an emulator, is not currently evoked as a submodule of the Measurement System Monitor but is accessible from it as a submodule. When this module is selected the measurement system is exited normally, possibly saving the current configuration and the selected module entered. On exit from the module, the HP 64000 System Monitor will be resumed rather than the measurement system. The continue option and configuration files work as usual. Any interactive specifications within an independent module are not supervised by the Measurement System Monitor. The module status for a module of this type is "indep." indicating that it is independent of the measurement system.

NOTES

Chapter 2

MEASUREMENT SYSTEM DISPLAY

FORMAT

Figure 2-1 shows the format of the station display when the Measure System Monitor is present and some module interaction has been specified. This display is not presented when there is only one module present.

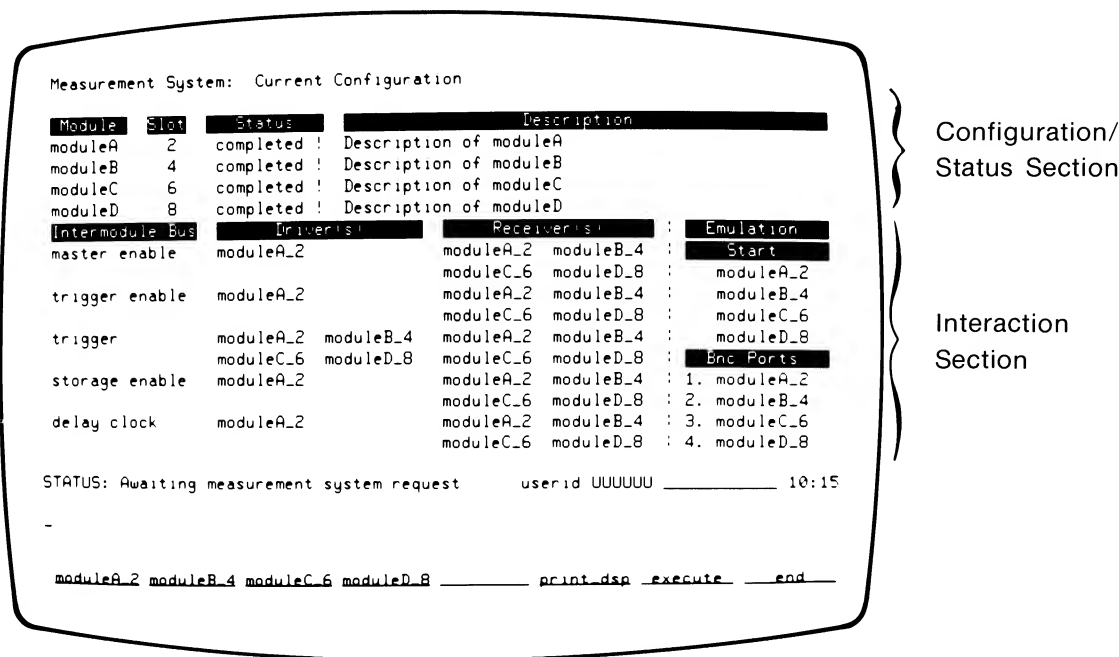


Figure 2-1. Measurement System Display Format

CONFIGURATION/STATUS SECTION

The top portion of the display describes any measurement system modules that are present and their current status. There may be up to four modules involved. Additional modules (those further back in the card cage) are ignored.

The module name consists of the type of module (e.g., state, timing, emZ8002) appended with the slot number of the control board for the module. This name is used to evoke the module and also appears on a softkey label. The slot number is used to distinguish between two modules of the same type and is displayed in a separate column to the right of the module name.

The status of each module consists of two parts in the Status column. The first is a single word description of the module status (described in Chapter 4).

The other status indicator for each module is the presence of an exclamation mark (!) following the single word status. This indicates that the module was involved in the currently executing or most recently completed measurement. If the exclamation mark is not present, the status word reflects the outcome of the last measurement in which the module was involved.

During configuration of the measurement system, the hardware configuration of each module is determined. This is reflected in the description in the upper-right portion of the display. Other conditions such as an unusable hardware configuration or the absence of controlling software may be described.

INTERACTION SECTION

The lower portion of the display data area describes the interaction between modules and is only shown when some interaction has been specified. The left side lists each of the Intermodule Bus lines and the names of the modules that are currently set up to be drivers and receiver of those lines. In the event that the interactive configuration is not permitted, the names of the modules in error will be displayed in flashing characters. Module names are presented as the type of module appended with the control board slot number. The capability of driving or receiving any particular Intermodule Bus function is dependent on the module and is specified within the module. Refer to individual module manuals for details.

Participation in the Emulation Start function is indicated on the right-hand side of the display. Any module specified to start with the next measurement execution is listed. When the execution occurs, the module will be removed. This module needs to be re-entered and returned to its intended starting configuration before becoming a participant in the start function.

Depending on the module, the BNC Ports on the rear panel of the station may be associated with a function. Generally, this is an output function intended as an instrument trigger or stimulus. Only one module at a time may use a Port. A request to designate multiple usage of a port will be refused in the module and requires that the current user of the port be disabled. Some emulators currently configure their internal analysis modules in a way that prevents the user of the BNC Ports by other modules. This is indicated in the BNC Port display area by the message "Reserved For Internal Analysis".

STANDARD SYSTEM DISPLAY INFORMATION

Status Line

The status line displays messages indicating the status of an execution in process or just terminated, various error conditions, and indications of other processes such as configuration of the measurement system. When no activity is occurring, the status line gives the current default userid. Refer to the Appendix for a summary of Status Line Messages.

Command Line

Commands are entered below the status line using the keyboard and softkeys labeled at the bottom of the display.

Softkeys

The last line of the display serves as labels for the eight softkeys. Command syntax is presented on these labels as a command is entered.

NOTES

Chapter 3

MEASUREMENT INTERACTION FUNCTIONS

Interactive measurements are performed using one or more of the Intermodule Bus lines, the emulation start function, and the rear-panel BNC ports.

IMB BUS LINES

The Intermodule Bus (IMB) is a high-speed bus used for communications between analysis modules in the HP 64000 System. It is physically located on a 20-pin connector tab on the upper-left corner of the card as viewed from the component side.

The bus consists of five interaction functions. Each analyzer may drive or receive a subset of these according to the nature of the analyzer and its feature set. Some analyzers may drive a line with a variety of internally defined functions. Unless otherwise stated, only one module may drive an IMB function, and any number of modules may receive a function. The five lines are described in the following paragraphs.

Master Enable

Function - Master Enable controls all analysis functions within every module involved in the current measurement. Whenever Master Enable is false, all analysis functions in receiving modules are frozen. When Master Enable is true, each module is allowed to perform analysis.

Driver - Master Enable can be driven in one of two modes. The default is run synchronization (driven by "exec/halt"). Master Enable will remain false until all modules are ready to begin execution and will stay true until all have completed their measurements or until a halt command is issued. The other mode requires that one module drives Master Enable to all others. It will still remain false until all modules are ready to begin, but it will be controlled by the driving module once measurement execution is in process. In this mode, Master Enable may change logic state any number of times during the measurement.

Receivers - All modules involved in the measurement automatically receive Master Enable, with the exception of the driver, if one is specified.

Trigger

Function - Trigger references data capture within each module which receives it. Trigger remains true once it is set by the driving module. Two modes exist:

1. Simple Trigger - one module triggers one or more others.
2. Or-ed Trigger - two or more modules trigger each other.

Drivers - Any number of modules may drive Trigger. If no module is specified, it will always be false.

1. Simple Trigger - One module is specified to drive Trigger.
2. Or-ed - Two or more modules both drive and receive Trigger.

Recievers - Any number of modules may receive Trigger. If no module is specified, the measurement can still be executed.

1. Simple Trigger - One or more modules receive Trigger. The module which drives Trigger does not receive it.
2. Or-ed Trigger - Two or more modules both drive and receive Trigger. Additional modules may be specified to only receive Trigger.

Trigger Enable

Function - Trigger Enable windows (arm and disarms) the trigger function within each module that receives it. The measurement may begin with Trigger Enable either true or false, and may change logical state any number of times during the measurement.

Driver - No more than one module can drive Trigger Enable during a measurement. If no module is specified to drive it, Trigger Enable is always true. If more than one module is specified, the measurement cannot be executed.

Receivers - Trigger Enable can be received by any module except the driver. If no modules receive it, the measurement can still be executed.

Storage Enable

Function - Storage Enable windows (arms and disarms) the storage function within each module that receives it. The measurement may begin with Storage Enable either true or false, and Storage Enable may change logical state any number of times during the measurement.

Driver - No more than one module can drive Storage Enable during a measurement. If no module is specified to drive it, Storage Enable is always true. If more than one module is specified , the measurement cannot be executed.

Receivers - Storage Enable can be received by any module except the driver. If no modules receive it, the measurement is still executed.

Delay Clock

Function - Delay Clock passes state clock information to other modules. One pulse is generated for each state clock detected by the driver while it receives Master Enable true.

Driver - No more than one module can drive Delay Clock during a measurement. If no module is specified to drive it, no Delay Clocks will occur. If more than one module is specified, the measurement cannot be executed.

Receivers - Delay Clock can be received by any module except the driver. If no modules receive it, the measurement can still be executed.

BNC PORTS

The rear panel of the HP 64000 station contains four BNC type connectors. In general, they are used to trigger other instruments such as oscilloscopes and logic analyzers or to cross-couple measurements between HP 64000 stations. Only one measurement system module may use a particular BNC port at a time. The current driver of a port must be disabled before another can be specified. The assignment of particular functions to a BNC port is determined by the individual modules.

Measurement configurations that only specify the driving of a BNC port without an IMB or Emulation Start interaction are not considered to be interactive measurements by the Measurement System Monitor. It is not possible to start an execution from the Measurement System Monitor in such a configuration.

EMULATION START

The Emulation Start function provides the means to release the target processor from a reset or trapped state from a module other than the emulation module. An emulator can be designated to participate in the measurement using the emulation "specify run" command. When the execute command is issued from the Measurement System Monitor or from the module with a designated inter-module interaction, the emulator will be released from reset or trapped state. The release occurs after all analysis modules have been started. This ensures that all processor-induced activity will be captured by the analysis modules. If multiple emulators are participating in the Emulation Start function, they will be started in the order of their control cards in the card cage.

When an execution has been started, the module status of an emulator participating in the start function will indicate "started", which can be compared to the "completed" status of an analyzer. If the internal analyzer associated with the emulator is also involved in the measurement, the started status will not appear. Instead, the status of the analyzer will be shown. In a measurement where the only interaction is with multiple emulators via the Emulation Start function, the measurement will be completed as soon as the emulated processors are released.

Once the emulator has been released and allowed to execute target system programs, it is not possible to reproduce the processor and memory conditions present before release. For this reason, an emulator is removed from participation in Emulation Start after an execution. The emulation module must be re-entered to specify that participation be performed with the next execution. In the case of "execute repetitively", the emulator is started on the first execution only. If Emulation Start is the only interaction specified, the execution will not be repeated.

Chapter 4

MEASUREMENT EXECUTION

STARTING A MEASUREMENT

Two types of measurements can be performed in the measurement system: single module and multiple module. They are described in the following paragraphs.

Single Module Measurements

A single module measurement must be evoked from within the module. It is also required that there be no interaction of this module with any other module. However, a single module measurement may be initiated from within a module even if two or more other modules are configured to have some interaction. Only the single module will perform the measurement. All other modules will remain in an inactive state. A single module measurement cannot be initiated from within the Measurement System Monitor. If the card cage contains only one measurement system module, the monitor does not appear and all measurements are single module measurements.

Multiple Module Measurements

A multiple module measurement may be evoked either from the measurement system or from any of the modules configured to interact with other modules. Any module which is not driving or receiving an IMB function or participating in the Emulation Start function will remain inactive. If no interaction has been specified or if the configuration is illegal, the execute key will not appear within the Measurement System Monitor and an execute command cannot be issued.

HALTING A MEASUREMENT

The halt command can be issued from the Measurement System Monitor, or from any module, whenever an execution is in progress. All modules involved in the measurement which do not yet have a "completed" status will be halted. The individual module status area of the display indicates whether a particular module completed its measurement before the halt command was issued.

REPETITIVE

Use of the repetitive option of the executive command will cause a new execution to be evoked whenever all modules involved in the current measurement have a completed status. Execution will be repeated no matter which module is currently evoked and will remain a single or multiple module measurement, depending on where the execution was started.

The new execution will involve the same modules as the last execution with the exception of the modules participating in the Emulation Start function. Since the Emulation Start participation is removed after the execution begins, a module using the function will not be involved in the next execution unless it is also driving or receiving an IMB function. If there is no interaction other than through Emulation Start, a repetitive execution will execute once and not repeat.

STATUS INDICATORS

Within the Measurement System Monitor, the progress of a measurement is indicated by the Status Line and the individual module status indicators.

Status Line

The status line indicates the progress of the entire measurement. Possible status messages are as follows:

Execution completed

All modules involved in the current execution have completed their measurements.

Execution halted

The execution has been stopped via the halt command before all modules completed their measurements. The individual module status indicate which modules did finish.

Execution in process

Some modules involved in the measurement have not completed.

Execution in process - repetitively

The current execution is repetitive and some modules are not currently in a completed state.

Module Status

Individual module status is displayed to the left of the module description in the upper portion of the display. More detailed module status is obtained by entering the individual module of interest. Possible status conditions are described below.

blank

The module has been involved in any measurement.

executing

The module is performing a measurement.

completed

The module completed the last measurement it performed.

halted

The last measurement involving this module was halted by the user before this module completed.

started

This applies to emulators that are specified to start and were designated to be on the Emulation Start line. It indicates only that it was started and does not appear if the internal analyzer for the emulator was used in the measurement.

unusable

The module cannot be used during this measurement session. This may occur either when the software needed to run the module was not present during configuration (e.g., flexible disc removed) or if the hardware configuration was not acceptable (e.g., data acquisition boards not connected).

indep.

The module is an emulator that is not currently a submodule of the measurement system and operates independently. The module is evoked in the same manner as the other modules. When the module is exited, control will be returned to the HP 64000 System Monitor rather than the Measurement System Monitor.

aborted

This module was exited via reset-reset at a time when the hardware configuration and the user specification were different. Due to hardware conditions, the measurement could not continue and this module was halted.

The other status indicator for each module is the presence of an exclamation mark (!) following the single word status. This indicates that the module was involved in the currently executing or most recently completed measurement. If it is not present, the status word reflects the outcome of the last measurement in which the module was involved.

Error Conditions

Execution aborted: config./h.w. conflict in XXXXXXXX_N

The module specified was unable to execute according to the current specification.

Execution aborted: hardware error in slot #N

The module specified was unable to execute according to the current specification.

Execution not allowed: incomplete intermodule bus config.

Execution cannot occur unless some interaction between modules has been supplied.

Execution not allowed: multiple drivers of LLLLLLLLL

The currently specified configuration prevents an execution from performing a meaningful measurement due to multiple drivers on the specified Intermodule Bus line.

Chapter 5

MEASUREMENT SYSTEM COMMANDS

GENERAL

This chapter briefly describes the syntax for the Measurement System commands.

end

SYNTAX

end

FUNCTION	The measurement session is terminated by exiting the Measurement System Monitor. The current configuration is saved on disc in the file configN:HP:trace to allow the continue option the next time the measurement system is evoked; ("N" is the station bus address or 8 for a stand-alone system).
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execute

SYNTAX

execute [repetitively]

Default Value	repetitive not specified - Single execution
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FUNCTION	Causes the execution of the currently configured measurement. This command is available from the Measurement System Monitor only when the current configuration is valid and involves some Module interaction. When an execution is in process, the halt softkey replaces the execute key. When there is no module interaction specified or if there is is an invalid measurement specification, the execute key is not present.
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When repetitive is specified, the execution will be reinitiated upon conclusion. This will continue until a halt command is issued from the Measurement System Monitor or until it is halted within a module. Execution continues to repeat even if a module is entered which is not involved in the measurement. Repetitive does not apply to the Emulation Start function. On the first execution, all Start function participants are removed.

An execution from the Measurement System Monitor will only start those modules which have been specified to have some intermodule interaction. Use of a BNC Port will not cause a module to be involved in a measurement initiated from the Measurement System Monitor.

halt

SYNTAX

halt

FUNCTION

Causes the measurement currently executing to be halted and turns off the repetitive option. The halt softkey is only displayed during execution in the place of the execute softkey. When the halt command is performed, some or all of the modules involved may have completed their measurement. This is indicated in the module status area on the display.

<MODULE>

SYNTAX

<MODULE> [<FILE>]

Default Value

<FILE> not specified - If the module has been entered previously in the measurement session, it will resume with its previous configuration. If this is the first entry into the module, it will initialize to a default state depending on the module.

FUNCTION

Enters the module specified. If no <FILE> name is specified, the action taken within the module depends on whether this was the first time it was entered, entered with a continue option, or a subsequent entry during a single measurement session. If it is the first entry, and continue was not specified on entry into the measurement system, the module will configure to its default state. This will depend on the characteristics of the module but generally consists of a simple measurement specification or a special configuration path into the module. If this is a subsequent entry into the module, or the continue option was used to enter the measurement system, the module will continue with its previous specification.

Entering a module with <FILE> specified causes the module to be configured by that file. In the case of an analyzer, the file is of type trace; for an emulator it is of type emul_com with a trace file of the same name used to configure the internal analyzer.

print_display

SYNTAX

Print_Display

FUNCTION

Copies the portion of the display above the Status line to the printer.

Appendix A

MESSAGE SUMMARY

The following messages may appear on the Status line.

Awaiting measurement system request userid UUUUUU

There is no execution currently in progress, and any command presented on the softkeys may be entered. UUUUUU is the current default userid.

Command file not created by IMB monitor

During reconfiguration with options continue, the file ConfigN:HP did not have the correct format for the measurement system because it was created by another module. The file will be correctly overwritten the next time the measurement system is ended.

Configuration completed

The measurement system has been entered without the continue option, and all modules have been reset to their default states.

Configuration file Default: new file or re-enter module

Displayed when the <FILE> prompt softkey is pressed as part of a module evoking command. The file name can be specified to configure the module according to a configuration saved during a previous measurement session.

Configuring measurement system

All modules are being configured to their default states.

Continuation of previous measurement session not possible

The continue option cannot be used because either the last session or module was ended using reset-reset, or performance verification has been executed, or the power has been off.

Execution aborted: config./h.w. conflict in XXXXXXX_N

The module specified was unable to execute according to the current specification.

Execution aborted: hardware error in slot #N

The module specified was unable to execute according to the current specification.

Execution already in progress

An execution cannot be started until the one in progress has been completed or halted.

Execution completed

All modules involved in the current execution have completed their measurements.

Execution halted

The execution has been stopped via the halt command before all modules completed their measurements. The individual module status indicates which modules did finish.

Execution in process

Some modules involved in the measurement have not completed.

Execution in process - repetitively

The current execution is repetitive and some modules are not currently in a completed state.

Execution not allowed: incomplete intermodule bus config.

Execution cannot occur unless some interaction between modules has been supplied.

Execution not allowed: multiple drivers of LLLLLLLL

The currently specified configuration prevents an execution from performing a meaningful measurement due to multiple drivers on the specified Intermodule Bus line.

Execution not in process

The execution being halted terminated before the halt command was issued.

File ffffffff:HP not found

The file specified was not found when a module was evoked. The module cannot be used until the necessary software has been supplied.

File meas_sysN:HP not present

A portion of the measurement system software is not present; N is a number indicating which portion.

Illegal disc number (0-7 allowed)

The disc specified is not in the syntactically allowable range.

Illegal hardware configuration in XXXXXXXX_N

During configuration, the module specified did not have an acceptable hardware configuration. The description of the module provided further information about the problem.

Intermodule Bus might not be reset, slot S (reset at power up)

There is a module in the card cage without the necessary software to control it. The module may interfere with intermodule measurements unless power has been off since the last time it was used in an intermodule measurement.

Loading measurement system

The control software for the measurement system is being loaded into the HP 64000 System.

No measurement system control boards

The card cage does not contain any boards that are designated as control boards for the measurement system. Card cage contents can be established using option_test.

Printing display

A copy of the upper portion of the display is being sent to the printer.

Printing of display completed

The print_display command is completed.

Reconfiguration completed

The measurement system has been re-entered with the continue option.

Reconfiguring measurement system

The measurement system is being configured to resume the last measurement session.

Saving current measurement system configuration

The current session configuration is being saved in the file ConfigN:HP:trace (N is the station bus address, 8 for a stand-alone station). This enables the continue option for the next time measurement system is evoked.

Software not found for indicated module(s)

Software required to use one or more of the modules was not present on the disc during configuration. Any such module may not be used during this session. The module status and description indicates this condition.

Syntax error

The command issued has an incorrect syntax and should be re-entered using the softkeys as a guide.

Too many control boards, some not accessible

There are more than four control boards present. Those further back in the card cage may not be used.

NOTES

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